

### **Abstract of the Disclosure**

The object of the invention is to provide technique and an apparatus for precisely measuring high frequency current that flows in a transmission line of  
5 a small impedance load circuit. A current waveform can be measured in wide bandwidth (at high-time resolution) and at high sensitivity without processing DUT (nondestructive) and without having an effect of the impedance of the apparatus (noninvasive) by installing  
10 a magneto-optical device in a magnetic field generated based upon current that flows in the transmission line, applying a bias magnetic field to the magneto-optical device by a magnetic field generator, making polarized light incident under the control of a position so that  
15 detection sensitivity is maximum and detecting the variation of polarization included in reflected light from the magneto-optical device.